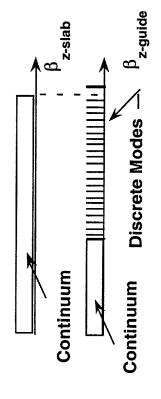
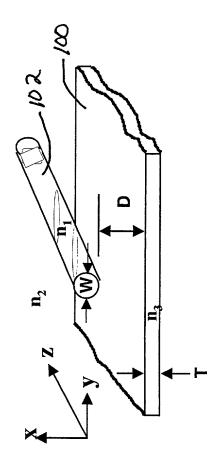
$\beta = (2\pi/\lambda) x$  Modal Index





<u>ig.</u> 1

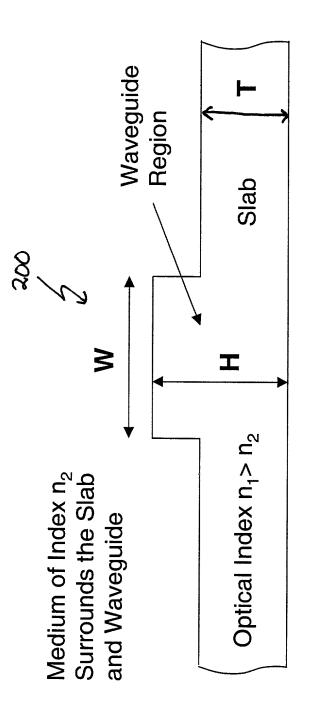


Fig. 2

Lateral Direction

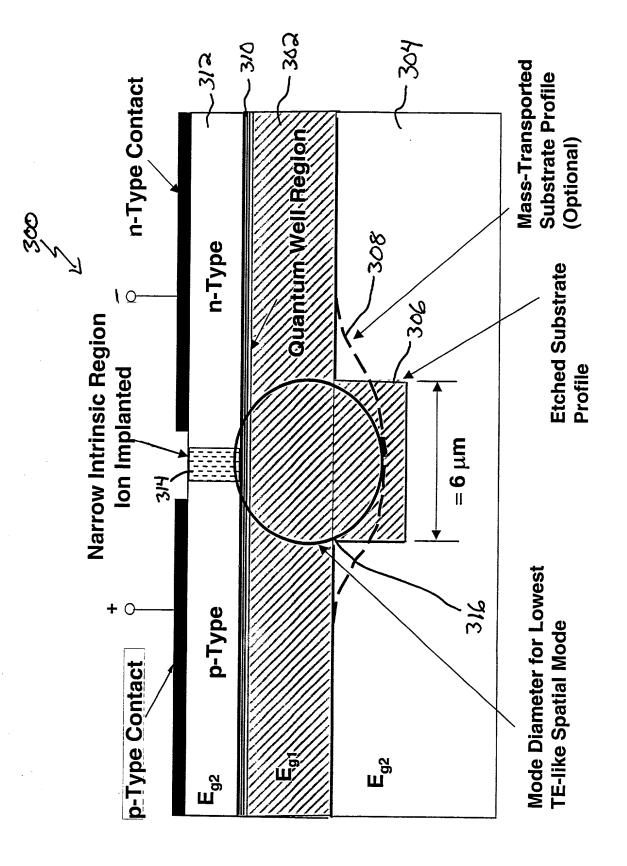


Fig. 3

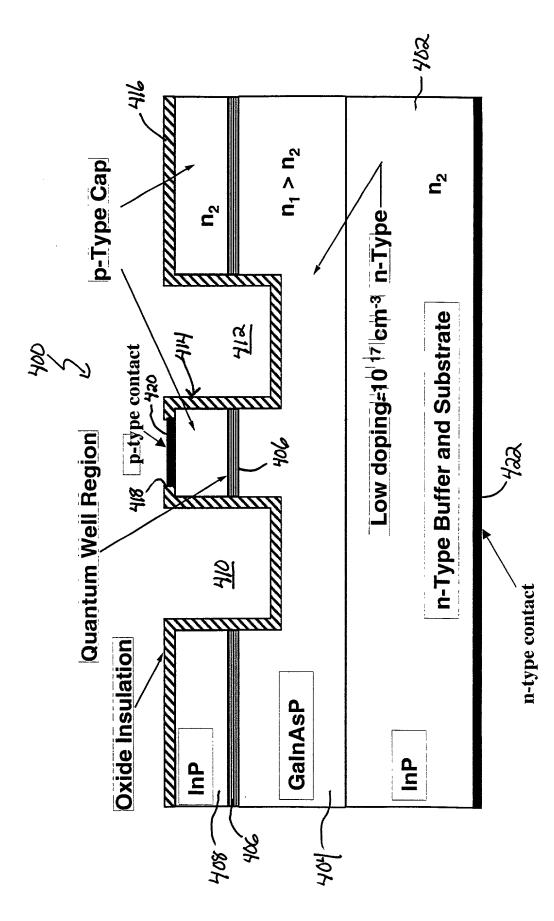
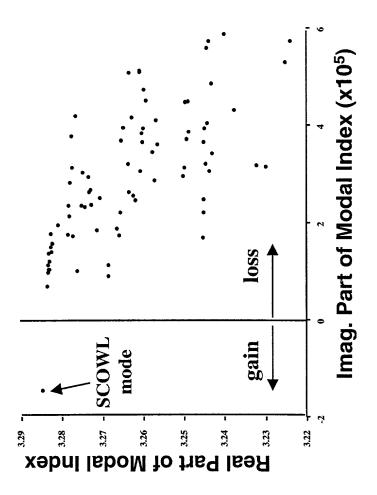
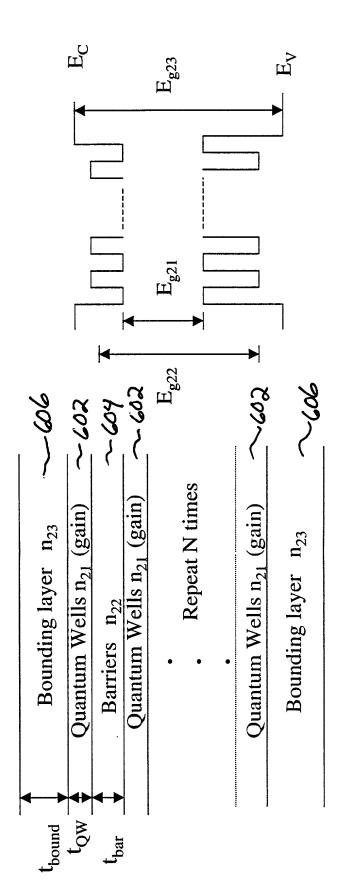


Fig. 4



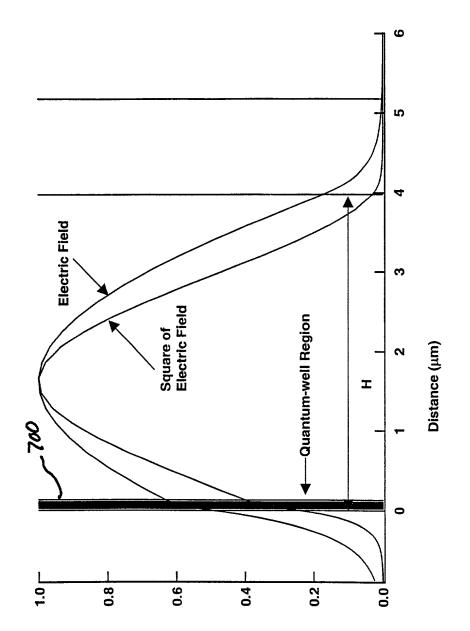




MQW Region Band Diagram

 $n_{21} > n_{22} \ge n_{23} \ge n_1 > n_2$  $E_{g21} < E_{g22} \le E_{g23} \le E_{g1}$ 

Fig. 6



Normalized Electric Field and square of Electric Field

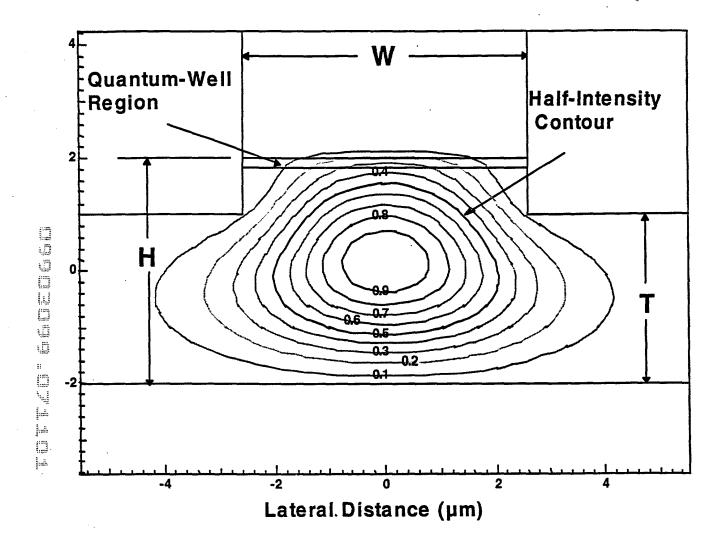


Fig. 8

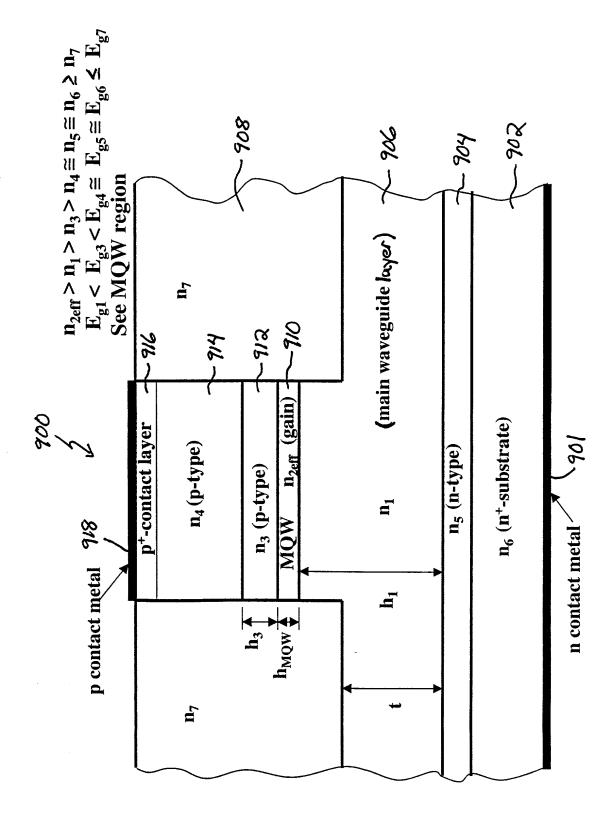


Fig. 9

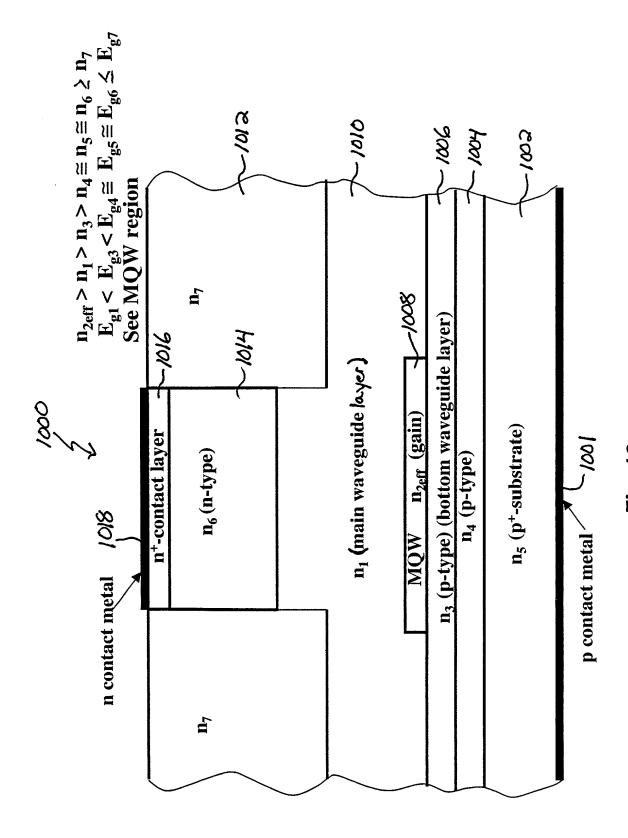


Fig. 10

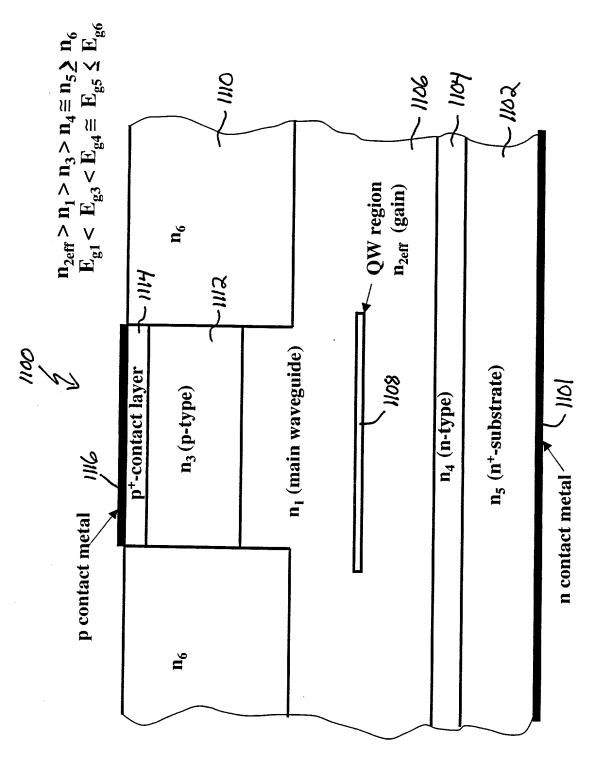
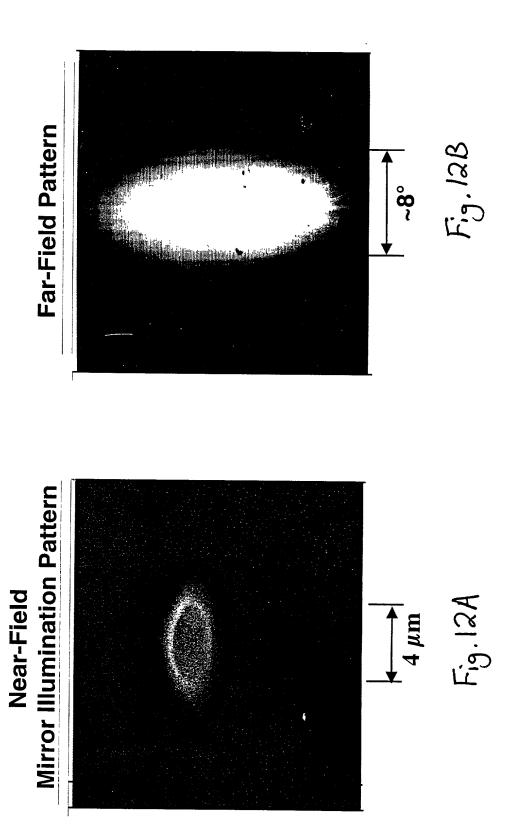
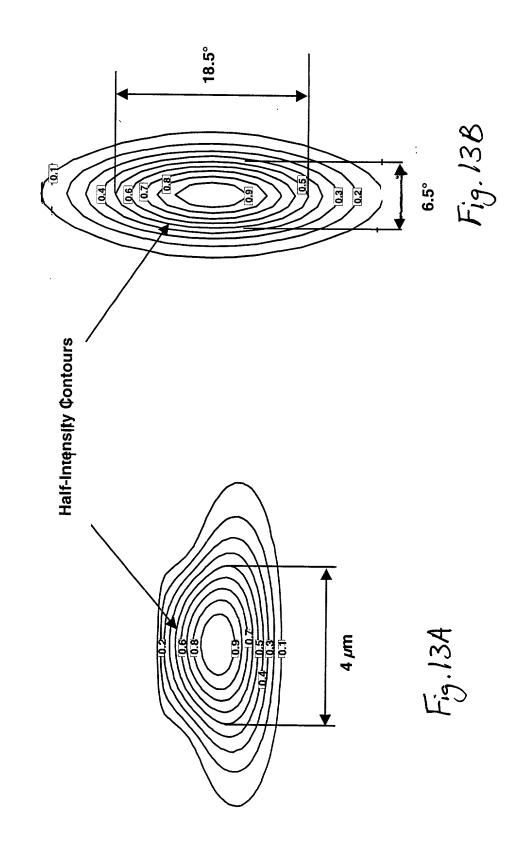


Fig. 11



## **Near-Field Pattern**

Far-Field Pattern



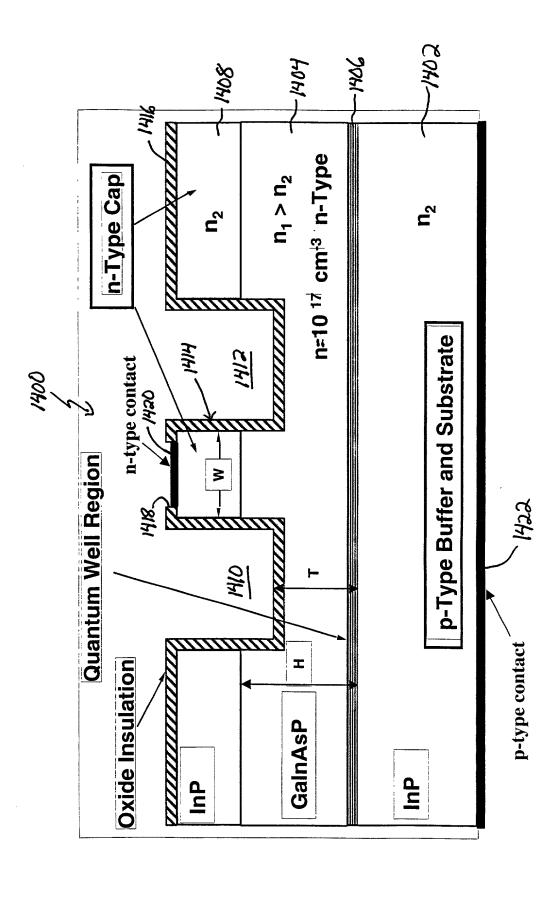


Fig. 14

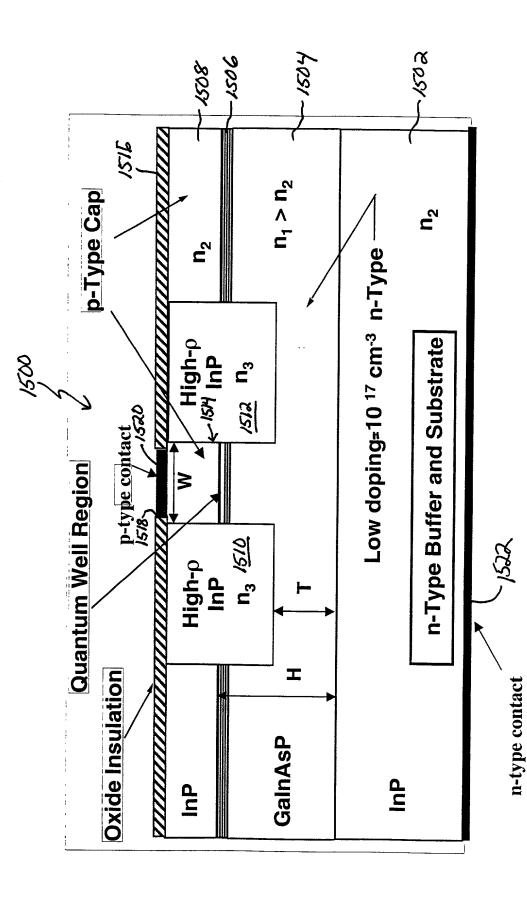


Fig. 15

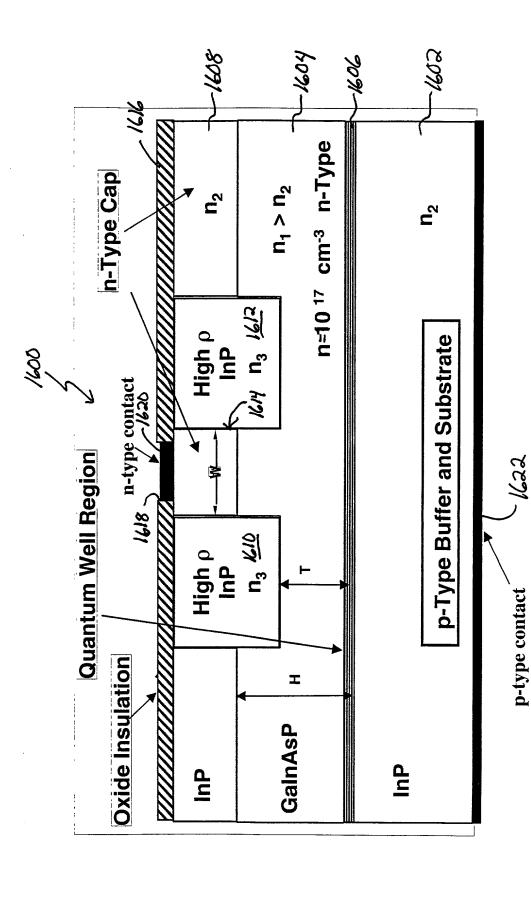


Fig. 16

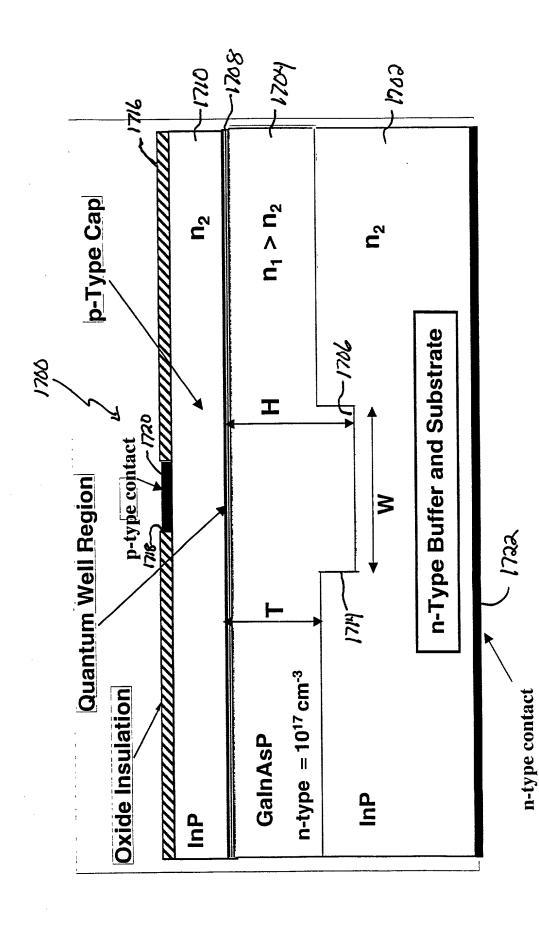


Fig. 17

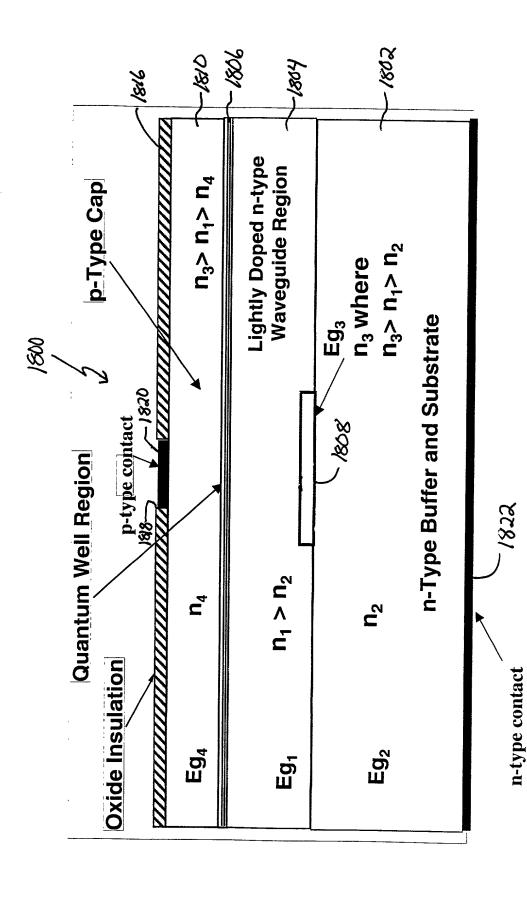


Fig. 18

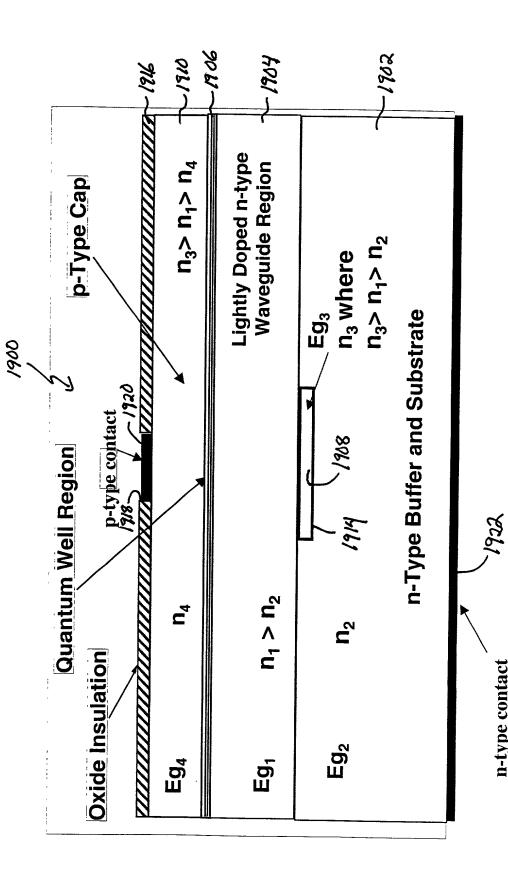


Fig. 19

n-type contact

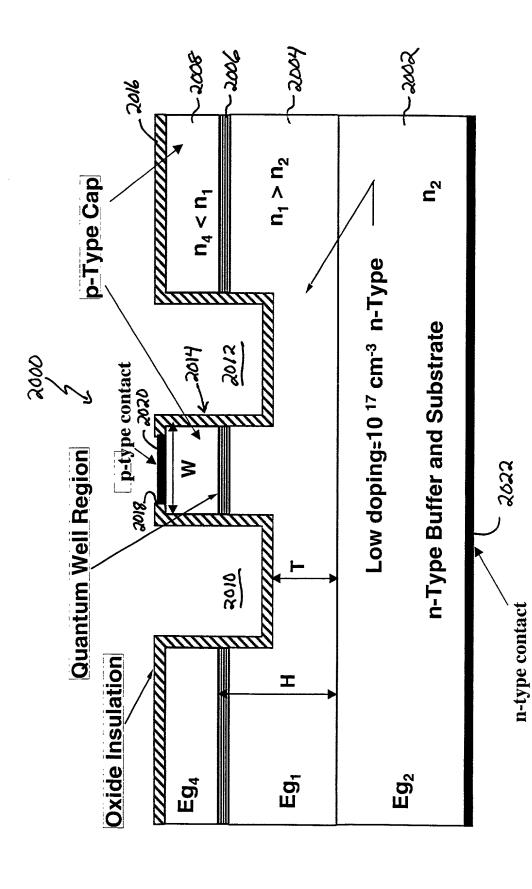


Fig. 20

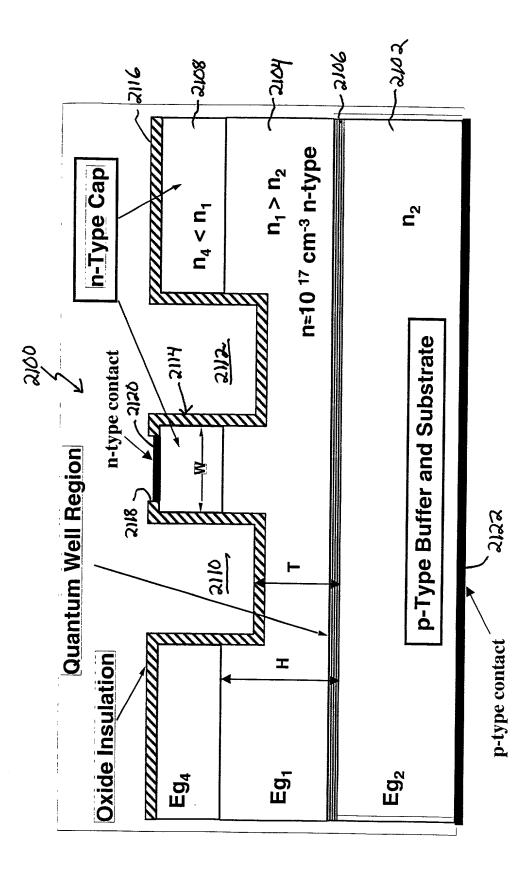


Fig. 21

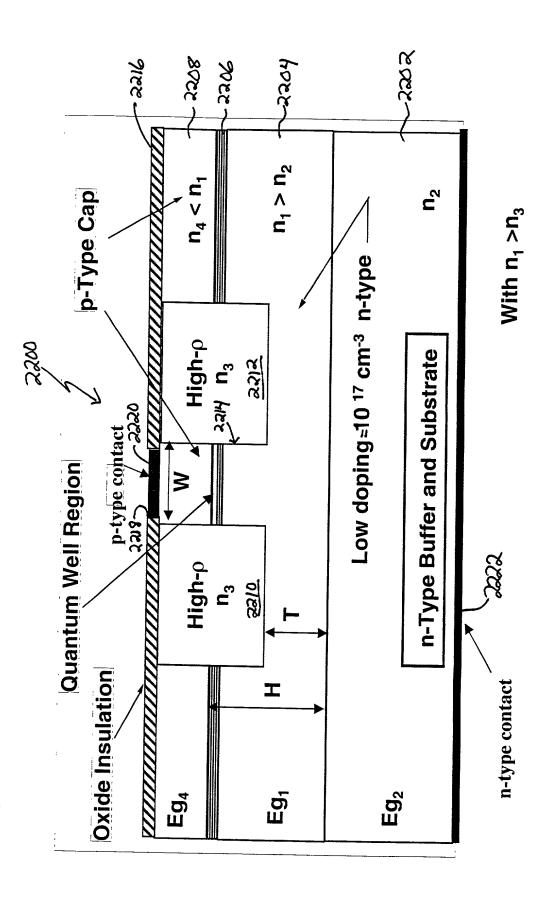


Fig. 22

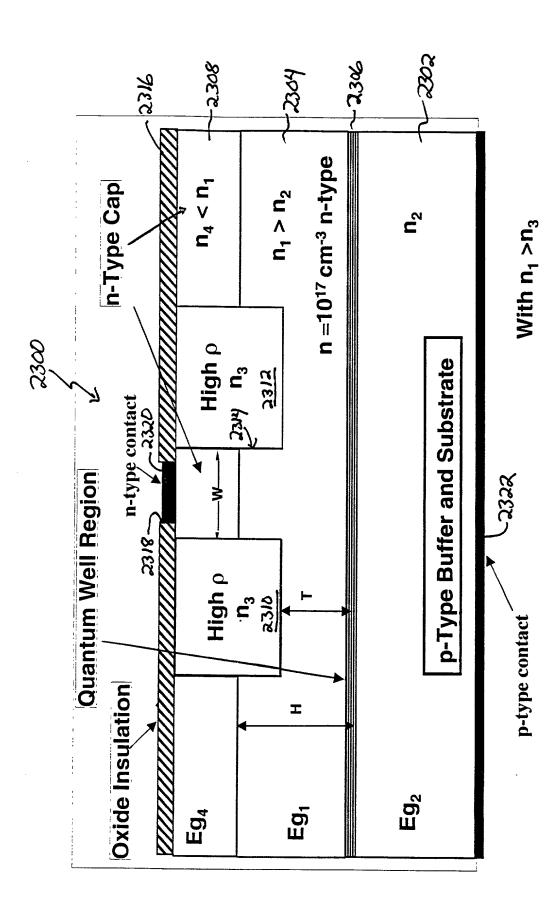


Fig. 23

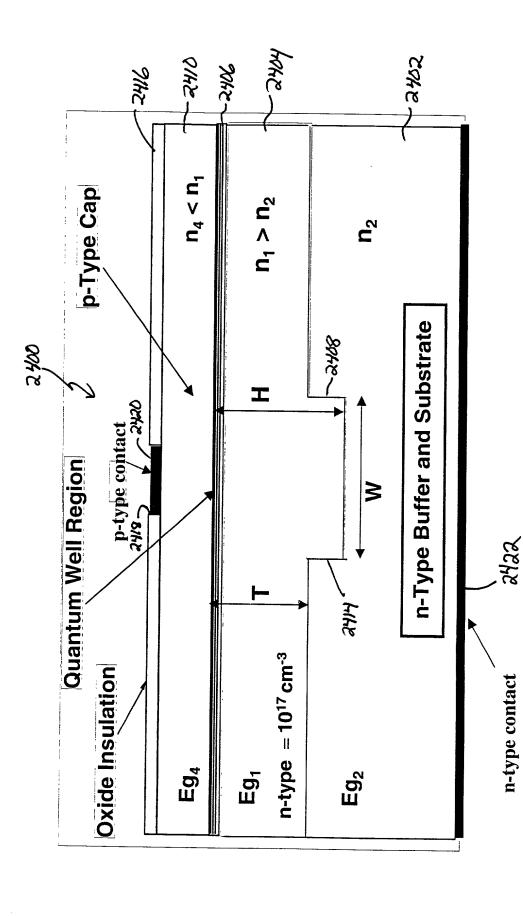


Fig. 24



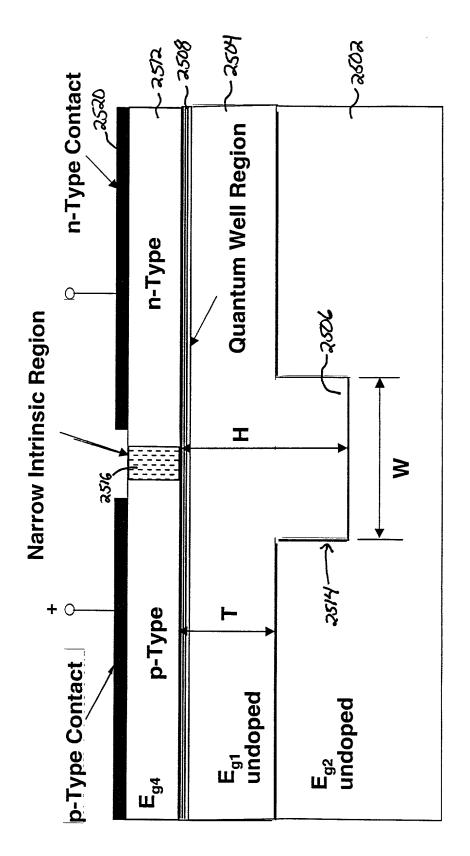


Fig. 25